

U.S. Patent Application Serial No. 10/087,913

Amendment dated January 6, 2004

Reply to OA of October 6, 2003

IN THE CLAIMS:

Please cancel claims 1-9 without prejudice or disclaimer.

Please add new claims 18-34 as follows:

Claims 1-9 (Currently Canceled).

Claim 18 (New): Conductive particles consisting essentially of:

a base material comprising one or more members selected from the group consisting of: Bi,

In, Pb, and alloys thereof; and

a coating material comprising one or more members selected from the group consisting of

Sn, In, Bi, Pb, and alloys thereof;

wherein said coating material is provided on said base material such that said coating material and said base material are in mutual contact.

Claim 19 (New): Conductive particles consisting essentially of:

a base material comprising one or more members selected from the group consisting of: Sn,

Bi, In, Pb, and alloys thereof; and

a coating material comprising two or more members selected from the group consisting of

Sn, In, Pb, Bi, and alloys thereof;

wherein said coating material is provided on said base material such that said coating material and said base material are in mutual contact.

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Claim 20 (New): Conductive particles consisting essentially of:

a base material comprising one or more members selected from the group consisting of: Sn,

Bi, In, Pb, and alloys thereof; and

a coating material comprising one or more members selected from the group consisting of Sn, Pb, and alloys thereof;

wherein said coating material is provided on said base material such that said coating material and said base material are in mutual contact.

Claim 21 (New) Conductive particles consisting essentially of:

a base material consisting of a metal that is a simple substance selected from the group consisting of: Sn, In, Bi, and Pb; and

a coating material comprising one or more members selected from the group consisting of Sn, In, Bi, Pb and alloys thereof;

wherein said coating material is provided on said base material such that said coating material and said base material are in mutual contact.

Claim 22 (New): The conductive particles of any one of claims 18, 19, 20 or 21, wherein said base material and said coating material are capable of producing an alloy having a melting point lower than 230°C by being heated at a temperature lower than 230°C.

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Claim 23 (New): The conductive particles of any one of claims 18, 19, 20 or 21, wherein said coating material has a film thickness corresponding to 5% or greater of the average particle size of the base material.

Claim 24 (New): The conductive particles of claim 23, wherein said coating material has a film thickness corresponding to 5% to 15% of the average particle size of the base material.

Claim 25 (New): The conductive particles of any one of claims 18, 19, 20 or 21, wherein said coating material has a film thickness of from 0.5 μm to 4.0 μm .

Claim 26 (New): The conductive particles of claim 25, wherein said coating material has a film thickness of from 2.0 μm to 4.0 μm .

Claim 27 (New): A conductive composition, comprising:
conductive particles comprising at least two materials selected from the group consisting of Sn, Bi, In, Pb, and alloys thereof, said at least any two materials being in mutual contact; and
a resin composition comprising one or more members selected from the group consisting of a thermosetting resin having a curing temperature lower than 230°C and a thermoplastic resin having a melting point lower than 230°C.

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Claim 28 (New): The conductive composition of claim 27, wherein said resin composition comprises at least one member selected from the group consisting of: epoxy-based thermosetting resins, phenolic-based thermosetting resins, acrylic-based thermosetting resins, polyethylene type thermoplastic resins, polyester type thermoplastic resins, polypropylene type thermoplastic resins, and acrylic type thermoplastic resins.

Claim 29 (New): The conductive composition of claim 27, wherein said curing temperature and/or said melting point, are in the range of from 100°C to 200°C.

Claim 30 (New): The conductive composition of claim 27, wherein said resin composition comprises 10 to 100 parts by weight based on 100 parts by weight of said conductive particles.

Claim 31 (New): The conductive composition of claim 30, wherein said resin composition comprises 10 to 40 parts by weight based on 100 parts by weight of said conductive particles.

Claim 32 (New): The conductive composition of claim 27, wherein said at least two materials comprise at least one base material and at least one coating material, where said coating material is provided on said base material to form a coating.

Claim 33 (New): The conductive composition of claim 32, wherein said coating material

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has a film thickness corresponding to 5% or greater of the average particle size of the base material.

Claim 34 (New): The conductive composition of claim 32, wherein said coating material

has a film thickness of from 0.5 μm to 4.0 μm .